AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A solid-state image sensor comprising a photosensitive array for capturing incident light from a desired scene,

said photosensitive array comprising a plurality of photo-sensors arranged in a direction of row and a direction of column, and microlenses formed respectively on the photo-sensors, each of said plurality of photo-sensors corresponding to a particular pixel included in the photosensitive array,

each of said plurality of photo-sensors comprising a first photosensitive cell having first sensitivity for photoelectrically transducing the incident light, and a second photosensitive cell having second sensitivity lower than the first sensitivity for photoelectrically transducing the incident light,

each of said microlenses causing the incident light to converge to both the first and second photosensitive cells of the corresponding ~~one of said plurality of photo-sensors~~ photo-sensor,

each of said microlenses having an optical center shifted from a center of corresponding one of said plurality of photo-sensors toward a center of said photosensitive array.

2. (Original) The sensor in accordance with claim 1, wherein each of said plurality of photo-sensors is arranged at a fixed pitch in the direction of row and the direction of column in a substantially square matrix.

3. (Original) The sensor in accordance with claim 1, each of said plurality of photo-sensors is shifted from adjoining one of said plurality of photo-sensors by a distance substantially corresponding to a half of a pitch between photo-sensors neighboring to each other in the direction of row and the direction of column.

4. (Original) The sensor in accordance with claim 1, wherein the second photosensitive cell of each of said plurality of photo-sensors is arranged at one side of the corresponding first photosensitive cell,

in the photo-sensor having the second photosensitive cell arranged nearer to the center of the photosensitive array with respect to the first photosensitive cell, the optical center of the corresponding microlens being shifted toward the second photosensitive cell of the photo-sensor.

5. (Original) The sensor in accordance with claim 2, wherein the second photosensitive cell of each of said plurality of photo-sensors is arranged at one side of the corresponding first photosensitive cell,

in the photo-sensor having the second photosensitive cell arranged nearer to the center of the photosensitive array with respect to the first photosensitive cell, the optical center of the corresponding microlens being shifted toward the second photosensitive cell of the photo-sensor.

6. (Original) The sensor in accordance with claim 3, wherein the second photosensitive cell of each of said plurality of photo-sensors is arranged at one side of the corresponding first photosensitive cell,

in the photo-sensor having the second photosensitive cell arranged nearer to the center of the photosensitive array with respect to the first photosensitive cell, the optical center of the corresponding microlens being shifted toward the second photosensitive cell of the photo-sensor.

7. (Original) The sensor in accordance with claim 4, wherein said microlenses are arranged such that the photo-sensors nearer to an edge of said photosensitive array are shifted to a further extent.

8. (Original) The sensor in accordance with claim 5, wherein said microlenses are arranged such that the photo-sensors nearer to an edge of said photosensitive array are shifted to a further extent.

9. (Original) The sensor in accordance with claim 6, wherein said microlenses are arranged such that the photo-sensors nearer to an edge of said photosensitive array are shifted to a further extent.

10. (Original) The sensor in accordance with claim 4, wherein said first photosensitive cell and said second photosensitive cell of each of said plurality of photo-sensors are positioned closer to the center and the edge of the photosensitive array, respectively.

11. (Original) The sensor in accordance with claim 5, wherein said first photosensitive cell and said second photosensitive cell of each of said plurality of photo-sensors are positioned closer to the center and the edge of the photosensitive array, respectively.

12. (Original) The sensor in accordance with claim 6, wherein said first photosensitive cell and said second photosensitive cell of each of said plurality

of photo-sensors are positioned closer to the center and the edge of the photosensitive array, respectively.

13. (Original) The sensor in accordance with claim 7, wherein said first photosensitive cell and said second photosensitive cell of each of said plurality of photo-sensors are positioned closer to the center and the edge of the photosensitive array, respectively.

14. (Original) The sensor in accordance with claim 8, wherein said first photosensitive cell and said second photosensitive cell of each of said plurality of photo-sensors are positioned closer to the center and the edge of the photosensitive array, respectively.

15. (Original) The sensor in accordance with claim 9, wherein said first photosensitive cell and said second photosensitive cell of each of said plurality of photo-sensors are positioned closer to the center and the edge of the photosensitive array, respectively.

16. (New) A photosensitive array for use in an imaging sensor, comprising:

a plurality of photo-sensors, wherein each photo-sensor comprises a primary and secondary photosensitive cells; and

a plurality of microlenses formed over the plurality of photo-sensors,

wherein each microlens is configured to converge luminous flux to both primary and secondary photosensitive cells of the corresponding photo-sensor,

wherein an optical center of each microlens is shifted from a center of the corresponding photo-sensor, an amount of the shift being based on location of the corresponding photo-sensor relative to a center of the photosensitive array, and

wherein a sensitivity to the luminous flux of the primary photosensitive cell is greater than a sensitivity to the luminous flux of the secondary photosensitive cell.

17. (New) The photosensitive array of claim 16, wherein the optical center of each micro lens is shifted to maximize the convergence of the luminous flux to the corresponding secondary photosensitive cell.

18. (New) The photosensitive array of claim 17, wherein the optical center of each micro lens nearer to a center of an opening of the corresponding secondary photosensitive cell than to a center of an opening of the corresponding primary photosensitive cell.

19. (New) The photosensitive array of claim 16, wherein the amount of the shift of each microlens is proportional to a distance of the corresponding photo-sensor from the center of the photosensitive array.

20. (New) The photosensitive array of claim 19, wherein the optical center of each microlens is closer to the center of the photosensitive array than the center of the corresponding photo-sensor.

21. (New) The photosensitive array of claim 16, wherein for each photo-sensor, the secondary photosensitive cell is closer to the center of the photosensitive array than the primary photosensitive cell.

22. (New) The photosensitive array of claim 21, wherein a line extending radially from the center of the photosensitive array intersects with

both the optical center of the microlens and a center of an opening for the secondary photosensitive.

23. (New) The photosensitive array of claim 16, wherein a relative positioning of the primary and secondary photosensitive cells for each photo-sensor is substantially fixed for the plurality of photo-sensors.

24. (New) The photosensitive array of claim 23, wherein a line extending radially from the center of the photosensitive array intersects with both the optical center of the microlens and a center of an opening for the secondary photosensitive.

25. (New) The photosensitive array of claim 16, wherein a relative positioning of the primary and secondary photosensitive cells for each photo-sensor on one side of a center line of the photosensitive array is reverse of a relative positioning of the primary and secondary photosensitive cells for each photo-sensor on other side of the center line of the photosensitive array.

26. (New) The photosensitive array of claim 16, wherein the optical center of each microlens is closer to the center of the photosensitive array than the center of the corresponding photo-sensor.

27. (New) The photosensitive array of claim 16, wherein the amount of the shift of the microlens is further based a relative positioning of the primary and secondary photosensitive cells of the corresponding photo-sensor.